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HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			EXAMINER NGUYEN, MAI T	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Objections

1. Claim 10 is objected to because of the following informalities: The method of claim 10 cannot depend on the method of claim 9 and use the device of claim 2 since claim 9 already sets forth the use of the device of claim 1. Appropriate correction is required.
2. Claims 19 and 20 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 19 and 20 repeat the claimed subject matter of claims 16 and 17, respectively.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-11 and 14-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

See MPEP § 2173.05(d). See lines 10-12.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-5, 8-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson (US 727,691) in view of Barker et al. (US 3,739,503).

Regarding claim 1, Robinson discloses a device for dislodging and recovering dredging material comprising:

a bearing housing F; and

a drive shaft D for rotatingly driving a cutter head seen in fig. 2 with a support ring N having a diameter, mounted on hub H, and a suction pipe C connected to suction mouth P surrounded by cutter shield E;

wherein the cutter head is capable of use on clay or sticky material which is considered relatively soft bed material, see p. 1, ll. 22-29.

But, Robinson does not disclose alternatively mounting a second cutter head on the drive shaft for use on relatively hard material.

Like Robinson, Barker teaches a device for dislodging and recovering dredging material, but also teaches having the following different heads: a cutter head 159 for cutting subaqueous materials such as minerals, see fig. 7 and col. 3, ll. 42-46; a venturi-jet system 203 for digging and recovering subaqueous materials, see fig. 9 and col. 3, ll. 49-53; and a bucket wheel device 204 for excavating and recovering subaqueous

Art Unit: 3671

materials, see fig. 10 and col. 3, ll. 54-57, wherein the different heads can be chosen according to their function and alternatively mounted on the same drive means 157.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to improve the device of Robinson by using the known technique of alternatively mounting a head according to its function as taught by Barker to improve similar devices in the same way, wherein an alternate cutter head could be used for relatively hard material, such as minerals, and wherein the cutter head would have a corresponding support ring diameter as known in the art.

Regarding claim 2, the combination of Robinson and Barker discloses the device of claim 1 wherein the alternative cutter heads have a number of suction mouths like suction mouth P which are alternatively connectable to the suction pipe as known in the art.

Regarding claim 3, the combination of Robinson and Barker discloses the device of claim 2 wherein the suction mouths are dimensioned such that in the operative position the bottom end fits closely between the cutter shield E and the support ring N, see Robinson, figs. 1 and 2.

Regarding claims 4 and 11, the combination of Robinson and Barker discloses the device of claims 2 and 3, respectively, wherein the alternative cutter heads each have a cutter shield E but does not disclose a cutter ladder.

However, Barker teaches that cutter ladders 153, 154 are old and well known in the dredging art, see fig. 2.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention provide the device of the combination of Robinson and Barker with a cutter ladder as taught by Barker since combining prior art elements according to known methods would yield predictable results.

Regarding claims 5 and 14, the combination of Robinson and Barker discloses the device of claims 4 and 11, respectively, wherein the cutter shields E take the form of a truncated cone and have an opening, see fig. 4; but does not disclose one angle opening being greater than the other.

However, a change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose*, 105 USPQ 237 (CCPA 1955).

Therefore, it would have been to a person having ordinary skill in the art to modify the angles of the openings of the combination of Robinson and Barker as a matter of design choice since such a modification would have involved a mere change in the size of a component.

Regarding claim 8, the combination of Robinson and Barker discloses a cutter suction dredger for dislodging and recovering dredging material comprising a device as claimed in claim 1, see claim 1 above.

Regarding claims 9 and 10, these claims are considered to be the obvious methods of using the device of claims 1 and 2 and as such are similarly rejected; but, the selection of a cutter head having a smaller diameter with a consequently smaller suction mouth to recover harder material is not disclosed.

Art Unit: 3671

However it is obvious that one skilled in the art would choose smaller diameters and therefore smaller openings for dredging harder material since it is known that forcing fluid through smaller openings creates higher fluid pressure that would provide better cutting and suction of harder material.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the device of the combination of Robinson and Barker with the step of choosing a cutter head with a smaller diameter and suction mouth with predictable results since it is known in the art to choose a cutter head as a function of material hardness and that smaller openings provide higher fluid pressure for better cutting and suction of harder materials.

7. Claims 6, 7 and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robinson in view of Barker as applied to claim 1 above, and further in view of Huff (US 2,678,203).

Regarding claims 6, 15, 16, 17, 18, 19 and 20, the combination of Robinson and Barker discloses the device of claims 1, 2, 3, 4, 5, 3 and 4, respectively, but does not disclose a nozzle.

However, Huff teaches a similar device for dislodging and recovering material further comprising nozzles 15, 29 for spraying a fluid under high pressure, see figs. 1 and 2, col. 2, ll. 36-41 and col. 3, ll. 34-38.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to provide the device of the combination of Robinson and

Art Unit: 3671

Barker with a nozzle as taught by Huff with the expected result of added efficiency to cutting solid material, see Huff, col. 2, ll. 8-14.

Regarding claim 7, the combination of Robinson, Barker and Huff discloses the device of claim 6, wherein the drive shaft D is not hollow so as to form a channel for fluid under pressure dispensed through the nozzles.

However, Huff teaches drive shaft 16 being hollow such that a channel 14 supplies fluid under pressure through the shaft to nozzles 15, see fig. 1 and col. 2, ll. 29-46.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to substitute the drive shaft of the combination of Robinson, Barker and Huff with the drive shaft of Huff since the simple substitution of one known, equivalent drive shaft for another would yield predictable results.

Response to Arguments

8. Applicant's arguments with respect to claims 1-11 and 14-20 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., features that structurally define how each cutter head is configured for hard or soft bed materials) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Art Unit: 3671

In this case, applicant appears to argue structure but has not claimed any structural differences between the first and second cutter head.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MAI T. NGUYEN whose telephone number is (571)272-7662. The examiner can normally be reached on Monday-Friday 8:00a-5:00p.

Art Unit: 3671

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas B. Will can be reached on (571) 272-6998. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Thomas B Will/
Supervisory Patent Examiner
Art Unit 3671

Mtn
7/30/09